

**CALIFORNIA DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
STRUCTURE POLICY & INNOVATION**

CLASSIFICATION TITLE Structural Design Technician III	DISTRICT/DIVISION/OFFICE 59/DES/SP&I/OEE	
WORKING TITLE Detailer	POSITION NUMBER 559-220-3036-009	EFFECTIVE 11/01/11

As a valued member of the Caltrans team, you make it possible for the Department to improve the mobility across California by being innovative and flexible; reporting to work as scheduled; working cooperatively with team members and others; and treating others fairly, honestly and with respect. Your efforts are important to each member of the team, as well as those we serve.

GENERAL STATEMENT: Under the direction of a Senior Bridge Engineer, incumbent is responsible for preparing complete sets of contract drawings for the most difficult and complex seismic retrofit of highway structures. Incumbent may also develop contract plans for complex steel and concrete structures (e.g., major interchange, viaducts and unique bridges). Incumbent may act in a lead capacity in the preparation of plans and/or quantity estimates for a wide variety of structures including bridges, tunnels, walls and barriers. This is the advanced journey level in the series. Duties include, but are not limited to:

TYPICAL DUTIES:

Percentage Job Description
Essential (E)/Marginal (M) ¹

- | | |
|---------|--|
| 30% (E) | Prepares construction contract drawings for the most difficult and complex steel, concrete, masonry, and timber structures from engineer's design notes and sketches. Uses state-of-the-art technology, i.e., Computer Aided Drafting/Design (CADD) and related complex computer programs to develop details and to determine layout and geometric design and to electronically submit plans to Office Engineer. |
| 30% (E) | Prepares construction contract drawings for seismic retrofit of the most difficult and complex concrete and steel structures from engineer's design notes using state-of-the-art technology, such as CADD. |
| 15% (E) | Prepares and updates standard drawings for retrofit of highway structures from engineer's notes and sketches. |
| 10% (E) | Calculates and checks quantities for preliminary and final estimates of structure costs. Checks completed drawings for accuracy and completeness of details. |

¹ ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned.
MARGINAL FUNCTIONS are minor tasks of the position that can be assigned to others.

- 5% (E) Makes engineering calculations as required for horizontal and vertical alignment and dimensions for layout of the most difficult and complex structures.
- 5% (E) Completes as-built corrections, either by hand drafting or using CADD, based on data supplied by the Structure Construction representative and/or the Project Engineer.
- 5% (E) Prepares and checks contract plans from charts and design aides.

SUPERVISION EXERCISED OVER OTHERS

None. May act as lead over drafting personnel.

KNOWLEDGE, ABILITIES AND ANALYTICAL REQUIREMENTS

Knowledge of: Details, methods, layouts, scale and organization of details used in the preparation of structural design, details, construction drawings and as-builts for a variety of structures of above average difficulty; engineering mathematics; quantity estimates for a variety of structures of above average difficulty; state-of-the-art technology, e.g., CADD, and related computer programs used to determine layout, detail drawings and create geometric designs for a variety of structures of above average difficulty; codes and specifications governing structural design and construction used in making engineering calculations for a variety of structures of above average difficulty; leadperson responsibilities on less difficult projects in the preparation of plans.

Ability to: Communicate both orally and in writing; follow oral and written directions; interpret complex sketches, drawings and plans encountered in the work; assist in performing geometric design of above average difficulty for various structures; prepare and check quantity estimates for a variety of structures of above average difficulty; use state-of-the-art technology, e.g., CADD, and related computer programs; assist in the training of Drafting Aids and SDT I's; analyze situations accurately and adopt an effective course of action.

Analytical requirements: The use of trigonometric calculations and interpretation of survey notes and computer alignment output in preparing General Plans, site data and locating specific abutments and bents. Must be thoroughly informed in regards to information available from standards.

CONSEQUENCE OF ERROR/RESPONSIBILITY FOR DECISIONS

Incumbent exercises judgement in the selection of views and standard plans and details used in the preparation of a complete set of plans, which could result in incomplete information in the contract plans and estimates. Incomplete information in the contract plans and estimates could result in unnecessary rework, increased cost and time to produce corrected plans, and possible delay of the project.

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Effective Date: November 1, 2011
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PUBLIC AND INTERNAL CONTACTS

Employee maintains communications, generally through the Project Engineer, with various personnel working on the project to which he/she is assigned, including other Department personnel, engineering consultant and industry representatives, to transmit or obtain relevant engineering information. These contacts may be verbal or written, as needed to perform assignments.

PHYSICAL, MENTAL AND EMOTIONAL REQUIREMENTS

Incumbent must be able to sit for long periods of time using a keyboard, mouse devices and video display monitor. Incumbent may also be required to move large or cumbersome plans and diagrams from one location to another. Must be able to interact, develop and maintain cooperative working relationships with staff.

WORK ENVIRONMENT

While at the base of operation, incumbent will work in a climate-controlled office under artificial light. Employees may also be required to travel to job sites and may be exposed to dirt, noise, uneven surfaces, and/or extreme heat or cold.

I have read, understand and can perform the duties listed above. If you believe you may require accommodation, please discuss this with the hiring supervisor.

Employee Name (please print)

Employee Signature

Date

I have discussed the duties with and provided a copy of this duty statement to the employee named above.

Supervisor Name (please print)

Supervisor Signature

Date